

CAMP SANDERS (PWSNO 1050003) SOURCE WATER ASSESSMENT REPORT

January 14, 2003



State of Idaho Department of Environmental Quality

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SOURCE WATER ASSESSMENT FOR CAMP SANDERS

Under the Federal Safe Drinking Water Act Amendments of 1996, all states are required by the U.S. Environmental Protection Agency (EPA) to assess every source of public drinking water for its relative sensitivity to contaminants regulated by the Act. The Department of Environmental Quality is completing the assessments for all Idaho public drinking water systems. The assessment for your drinking water source is based on well construction characteristics; site specific sensitivity factors associated with the aquifer the water is drawn from; a land use inventory inside the well recharge zone; and water quality history. For non-community transient water systems like Camp Sanders, recharge zones were generally delineated as a 1000-foot fixed radius around the wells.

This report, *Source Water Assessment for Camp Sanders* describes factors used to assess susceptibility to contamination. The analysis relies on information from the well log; an inventory of land use inside the delineation boundaries, well site characteristics, potential contaminant sites identified through a Geographic Information System database search; and information from the public water system file. The ground water susceptibility analysis worksheet for Camp Sanders is attached.

Taken into account with local knowledge and concerns, this assessment should be used as a planning tool to develop and implement appropriate protection measures for this system. **The results should not be used as an absolute measure of risk and are not intended to undermine the confidence in your water system.**

Well Construction. The Camp Sanders water system serves a church and facilities for 100 campers located on Sanders Road 2 miles east of Highway 95 near Tensed, Idaho. A 600-foot deep well that was drilled in 1991 is the drinking water source for the system. The 6-inch steel casing extends from a foot above ground to 537 feet below where it terminates in clay. The bottom 63 feet of the well bore, drilled in shale, is free standing. The casing is fitted with a watertight well cap and is perforated between 485 and 498 feet below the surface. The 50-foot deep well seal extends into a clay bed that begins 20 feet below land surface. The static water level is 70 feet below ground. During drilling, ground water was first encountered in a sand stratum between 480 to 500 feet. The estimated capacity of the well is 5 gpm. No deficiencies in wellhead or well seal maintenance were noted during a sanitary survey in February 1998.

Well Site Characteristics. Hydrologic sensitivity scores are derived from information on the well log and from the soil drainage classification inside the recharge zone delineated for your well. Soils in the recharge zone delineated for Camp Sanders are poorly to moderately well drained. Soils in these drainage classifications are more protective of the ground water than soils that drain quickly because they slow migration of contaminants toward the well. Shale and clay predominate in the soil column above the water table at the Camp Sanders well site. Clay interbeds with a cumulative thickness of 426 feet form an aquitard that inhibits vertical transport of contaminants.

Potential Contaminant Inventory. Land inside the 1000-foot radius recharge zone delineated for the Camp Sanders well is mostly devoted to dryland agriculture with some grazing. The camp septic system is located about a quarter of a mile from the well. An ephemeral stream is located about 400 feet north of the well.

Water Quality History. Camp Sanders has an excellent water quality history. Total coliform bacteria have been absent from all samples tested since the well was brought on line in 1991. Nitrates have not been detected in annual tests. No pesticides or volatile organic compounds were detected in a comprehensive analysis conducted in August 1993.

Susceptibility to Contamination. An analysis of the Camp Sanders well, incorporating information from the public water system file, and the potential contaminant inventory, ranked the well a low risk relative to all classes of regulated contaminants. The complete ground water susceptibility work sheet for your system is on page 6 of this report. Formulas used to compute final scores and susceptibility rankings are at the bottom of the worksheet.

Source Water Protection. This assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what ranking a source receives, protection is always important. Whether the source is currently located in a “pristine” area or an area with numerous industrial and/or agricultural land uses, the way to ensure good water quality in the future is to act now to protect valuable water supply resources.

Continuing to operate and maintain the water system in compliance with the Idaho Rules for Public Drinking water systems is probably the most effective drinking water protection tool available to Camp Sanders. Some of the required water quality testing was not done when the management of the camp changed hands in 2001. The new board of directors and camp manager may find it useful to develop a written testing and maintenance schedule so important routine tasks are attended to in a timely manner.

The 1998 sanitary survey of the water system recommended installing fencing to prevent livestock from grazing within 50 feet of the wellhead. Correspondence in the public drinking water system file for Camp Sanders does not indicate whether the fencing project and repairs to the camp reservoir have been completed.

There are a number of voluntary measures Camp Sanders can implement as well. Every system should develop an emergency response plan. There is a simple fill-in-the-blanks form available on the DEQ website (www.deq.state.id.us/water/water1.htm) to guide systems through the emergency planning process.

Drinking water protection partnerships with landowners and in the recharge zone should also be established. Some of them may not be aware that their property is in a sensitive area where household, business or agricultural practices could have a negative impact on public drinking water supplies. The Camp Sanders should investigate ground water stewardship programs like Home*A*Syst or Farm*A*Syst. These programs are designed to help well owners assess everyday activities for their potential impact on drinking water quality. Topics include petroleum product storage, septic system maintenance, handling and storing lawn and household chemicals and similar activities. Due to the time involved with the movement of ground water, drinking water protection activities should be aimed at long-term management strategies even though these strategies may not yield results in the near term.

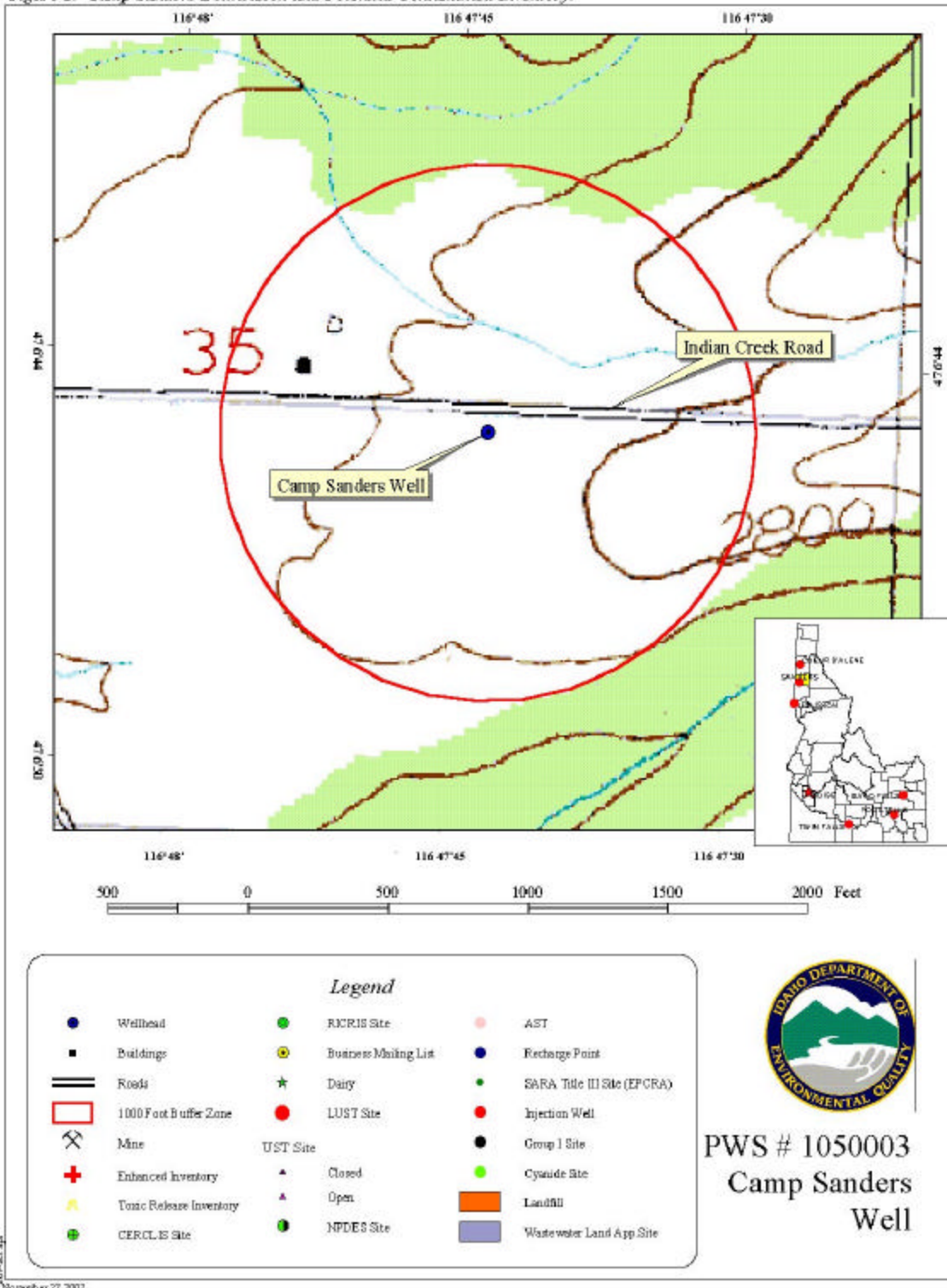
Assistance. Public water suppliers and users may call the following IDEQ offices with questions about this assessment and to request help with drinking water protection planning.

Coeur d'Alene Regional DEQ Office (208) 769-1422

State IDEQ Office (208) 373-0502

Website: [http:// www.deq.state.id.us/water/water1.htm](http://www.deq.state.id.us/water/water1.htm)

Figure 1. Camp Sanders Delineation and Potential Contaminant Inventory.



Ground Water Susceptibility

Public Water System Name :

CAMP SANDERS

Well :

WELL #1

Public Water System Number :

1050003

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1. System Construction		SCORE			
Drill Date	10/4/91				
Driller Log Available	YES				
Sanitary Survey (if yes, indicate date of last survey)	YES 1998				
Well meets IDWR construction standards	YES	0			
Wellhead and surface seal maintained	YES	0			
Casing and annular seal extend to low permeability unit	YES	0			
Highest production 100 feet below static water level	YES	0			
Well located outside the 100 year flood plain	YES	0			
Total System Construction Score		0			
2. Hydrologic Sensitivity					
Soils are poorly to moderately drained	YES	0			
Vadose zone composed of gravel, fractured rock or unknown	NO	0			
Depth to first water > 300 feet	YES	0			
Aquitard present with > 50 feet cumulative thickness	YES	0			
Total Hydrologic Score		0			
3. Potential Contaminant / Land Use -		IOC	VOC	SOC	Microbial
		Score	Score	Score	Score
Land Use	CROPLAND	2	2	2	2
Farm chemical use high	NO	0	0	0	
IOC, VOC, SOC, or Microbial sources in Sanitary Setback	NO	NO	NO	NO	NO
Total Potential Contaminant Source/Land Use Score -		2	2	2	2
Potential Contaminant / Land Use - 1000-Foot Radius					
Contaminant sources present (Number of Sources)	Camp Septic System, Surface Water	1	0	0	2
(Score = # Sources X 2) 8 Points Maximum		2	0	0	4
Sources of Class II or III leachable contaminants or Microbials	NO	1	0	0	
4 Points Maximum		0	0	0	
1000-Foot Radius contains or intercepts a Group 1 Area	NO	0	0	0	0
Land use 1000-Foot Radius	25 to 50% Agricultural Land	2	2	2	2
Total Potential Contaminant Source / Land Use Score - 1000-Foot Radius		5	2	2	6
Cumulative Potential Contaminant / Land Use Score		7	4	4	8
4. Final Susceptibility Source Score		2	1	1	3
5. Final Well Ranking		Low	Low	Low	Low

The final scores for the susceptibility analysis were determined using the following formulas:

- 1) VOC/SOC/IOC Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.27)
- 2) Microbial Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.35)

Final Susceptibility Ranking:

- 0 - 5 Low Susceptibility
 6 - 12 Moderate Susceptibility
 > 13 High Susceptibility

POTENTIAL CONTAMINANT INVENTORY

LIST OF ACRONYMS AND DEFINITIONS

AST (Aboveground Storage Tanks) – Sites with aboveground storage tanks.

Business Mailing List – This list contains potential contaminant sites identified through a yellow pages database search of standard industry codes (SIC).

CERCLIS – This includes sites considered for listing under the **Comprehensive Environmental Response Compensation and Liability Act (CERCLA)**. CERCLA, more commonly known as Superfund is designed to clean up hazardous waste sites that are on the national priority list (NPL).

Cyanide Site – DEQ permitted and known historical sites/facilities using cyanide.

Dairy – Sites included in the primary contaminant source inventory represent those facilities regulated by Idaho State Department of Agriculture (ISDA) and may range from a few head to several thousand head of milking cows.

Deep Injection Well – Injection wells regulated under the Idaho Department of Water Resources generally for the disposal of stormwater runoff or agricultural field drainage.

Enhanced Inventory – Enhanced inventory locations are potential contaminant source sites added by the water system. These can include new sites not captured during the primary contaminant inventory, or corrected locations for sites not properly located during the primary contaminant inventory. Enhanced inventory sites can also include miscellaneous sites added by the Idaho Department of Environmental Quality (DEQ) during the primary contaminant inventory.

Floodplain – This is a coverage of the 100year floodplains.

Group 1 Sites – These are sites that show elevated levels of contaminants and are not within the priority one areas.

Inorganic Priority Area – Priority one areas where greater than 25% of the wells/springs show constituents higher than primary standards or other health standards.

Landfill – Areas of open and closed municipal and non-municipal landfills.

LUST (Leaking Underground Storage Tank) – Potential contaminant source sites associated with leaking underground storage tanks as regulated under RCRA.

Mines and Quarries – Mines and quarries permitted through the Idaho Department of Lands.)

Nitrate Priority Area – Area where greater than 25% of wells/springs show nitrate values above 5mg/l.

NPDES (National Pollutant Discharge Elimination System) – Sites with NPDES permits. The Clean Water Act requires that any discharge of a pollutant to waters of the United States from a point source must be authorized by an NPDES permit.

Organic Priority Areas – These are any areas where greater than 25 % of wells/springs show levels greater than 1% of the primary standard or other health standards.

Recharge Point – This includes active, proposed, and possible recharge sites on the Snake River Plain.

RICRIS – Site regulated under **Resource Conservation Recovery Act (RCRA)**. RCRA is commonly associated with the cradle to grave management approach for generation, storage, and disposal of hazardous wastes.

SARA Tier II (Superfund Amendments and Reauthorization Act Tier II Facilities) – These sites store certain types and amounts of hazardous materials and must be identified under the Community Right to Know Act.

Toxic Release Inventory (TRI) – The toxic release inventory list was developed as part of the Emergency Planning and Community Right to Know (Community Right to Know) Act passed in 1986. The Community Right to Know Act requires the reporting of any release of a chemical found on the TRI list.

UST (Underground Storage Tank) – Potential contaminant source sites associated with underground storage tanks regulated as regulated under RCRA.

Wastewater Land Applications Sites – These are areas where the land application of municipal or industrial wastewater is permitted by DEQ.

Wellheads – These are drinking water well locations regulated under the Safe Drinking Water Act. They are not treated as potential contaminant sources.

NOTE: Many of the potential contaminant sources were located using a geocoding program where mailing addresses are used to locate a facility. Field verification of potential contaminant sources is an important element of an enhanced inventory.

Where possible, a list of potential contaminant sites unable to be located with geocoding will be provided to water systems to determine if the potential contaminant sources are located within the source water assessment area.